Alaskan Way Viaduct and Seawall Replacement Project
Central Waterfront
DRAFT Purpose and Need Statement (08/14/08)

Introduction

The Federal Highway Administration, the Washington State Department of Transportation (WSDOT), the City of Seattle and King County, in cooperation with the Army Corps of Engineers, are proposing to replace the Alaskan Way Viaduct and the Alaskan Way Seawall. Both the Alaskan Way Viaduct Corridor and the Alaskan Way Seawall are located in downtown Seattle, King County, Washington. The Alaskan Way Seawall extends from South Washington Street to Broad Street along Elliott Bay on Puget Sound. From South Washington Street to approximately Pike Street the seawall supports the viaduct. The entire length of the seawall supports surface streets, buildings, and utilities; north of Bell Street it also supports the BNSF railroad mainline.

The Alaskan Way Viaduct (part of SR 99) and Interstate 5 (I-5) are the two primary north-south routes to and through downtown Seattle. The Alaskan Way Viaduct along the central waterfront currently carries about 110,000 vehicles a day and serves both through trips and trips accessing the downtown business district and nearby neighborhoods. The Alaskan Way Viaduct provides the quickest and most convenient route to and through downtown Seattle for communities located to the northwest and southwest of downtown. The Viaduct plays an important role in freight mobility, providing a major truck route through downtown, and providing access to the Ballard-Interbay and greater Duwamish manufacturing and industrial centers. The Viaduct also serves as a transit route for local and express bus service to downtown Seattle.

WSDOT studies in 1995 and 1996 concluded that the soils on which the Alaskan Way Viaduct is constructed are vulnerable to soil liquefaction and may lose their ability to support the structure. Recent studies in 2007 have concluded there is a 1-in-10 chance during the next 10 years of an earthquake that would render the Alaskan Way Viaduct unusable or even cause collapse.

The February 28, 2001, Nisqually earthquake (magnitude 6.8, located 35 miles from Seattle and deep below the surface) caused moderate damage to the Alaskan Way Viaduct. The structure was closed for inspection and repairs intermittently for several days over a period of several months. The extent of damage and loss of the heavily traveled corridor heightened awareness of the need for immediate improvements. A

Structural Sufficiency Report was prepared after the earthquake and it concluded that continued reliance on the existing viaduct is not prudent.

Because this seismically vulnerable section of SR 99 is critical to local and regional transportation, the agencies will look at the entire system of streets, transit service, and freeways from Lake Washington to Elliott Bay, and from NE 85th Street in the north to Seattle's city limits in the south. Any solution will include transportation systems and facilities that support the movement of people and goods to and through downtown Seattle.

The Seawall supports the soils that hold up Alaskan Way (the surface street), the Seattle waterfront, and a variety of adjacent structures and utilities. The fills retained by the wall also provide lateral support for some of the foundations of the Alaskan Way Viaduct. Alaskan Way includes the tracks of King County Metro's Waterfront Streetcar (temporarily out of service), which provides trolley access to various waterfront locations. Alaskan Way also provides access to Colman Dock, which supports vehicle and passenger ferry service, and to other marine passenger vessel terminals.

Following the Nisqually earthquake, field investigations and liquefaction analyses were performed for a portion of Alaskan Way (the surface street) where settlements of the roadway had occurred. These investigations concluded that a portion of the loose fills below the relieving platform liquefied and settled in many areas and that substantial portion of the Seawall structure has been heavily damaged by marine borer activity.

Purpose

The purpose of the project is to improve public safety by replacing the existing Alaskan Way Viaduct and Seawall with transportation systems and facilities with improved earthquake resistance that provide for the efficient movement of people and goods in and through downtown Seattle.

Need

The Alaskan Way Viaduct and Alaskan Way Seawall are both at the end of their useful life. Improvements or alternatives to both are required to protect public safety. Because these facilities are at risk of sudden and catastrophic failure in an earthquake, the replacement systems and facilities should be implemented as quickly as possible. Mobility and accessibility to and through downtown Seattle are vital to maintaining local, regional, and state-wide economic health. FHWA, WSDOT, the City of Seattle and King County have identified the following underlying needs the project should address:

Improve public safety

Replacing the viaduct is an urgent public safety issue. Any solution to the Alaskan Way Viaduct must improve public safety for current viaduct users and along the central waterfront.

Provide efficient movement of people and goods
Any solution to the Alaskan Way Viaduct must maintain or improve the ability to move people and goods today and in the future in and through downtown Seattle in an efficient manner, including access to businesses, port, rail, and transit facilities during and after construction.

Maintain or improve downtown Seattle, regional, the port and state economies
Any solution to the Alaskan Way Viaduct should sustain the city, region, port and state's economic vitality during and after construction.

Enhance Seattle's waterfront, downtown and adjacent neighborhoods as a place for people
Any solution to the Alaskan Way Viaduct should augment Seattle's reputation as a world-class destination.

Improve the health of the environment
Any solution to the Alaskan Way Viaduct should demonstrate environmental leadership, with a particular emphasis on supporting local, regional and state climate change, water quality and Puget Sound recovery initiatives.